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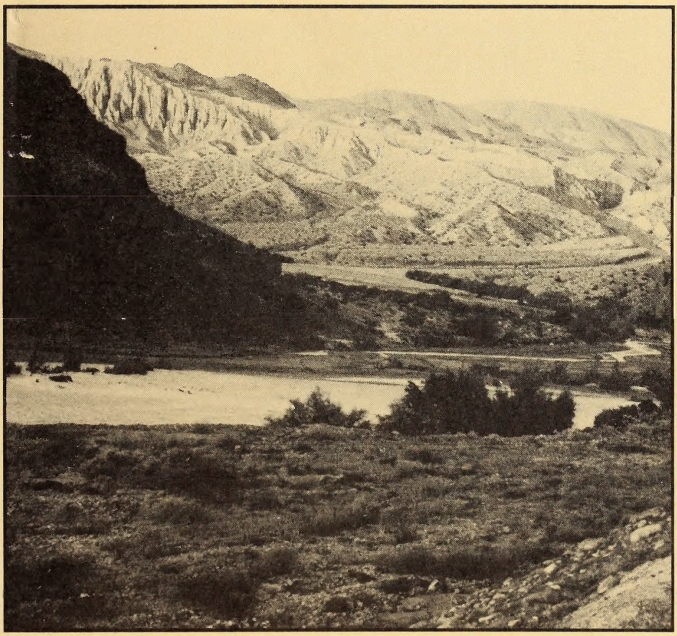
A TOUR OF THE CALIFORNIA DESERT



June 19-21, 1988

retary of the Interior
Don Hodel

HD
243
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1988

BUREAU OF LAND MANAGEMENT DISTRICTS

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Welcome to the California Desert

It is a pleasure to welcome you to the California Desert Conservation Area (CDCA). The CDCA covers almost one-quarter of California, or about 25 million acres. BLM manages about half of that total, and the remainder includes 3 million acres controlled by the military; 2.5 million acres of national parks; 400,000 acres of State Parks; and 7 million acres of private and State lands.

Congress created the CDCA in 1976 and directed BLM to develop a balanced multiple use plan, with the public's help, to guide management of the area. Special emphasis was to be given to protection, recreation use, and wise development of the CDCA's public resources.

BLM completed that plan in 1980, after spending $8 million and evaluating some 40,000 public comments. The plan was a compromise among all competing interests and balanced uses fairly. It divided the Desert into zones for protection, use, and development and established a number of special management areas to ensure preservation of sensitive resources.

The tour you are taking covers only a small portion of the CDCA; time does not allow you to see hundreds of other fascinating aspects of this beautiful, dynamic, and strategically important area. We have chosen some representative sites that we think you will enjoy.

I invited Secretary Hodel to see the area and talk to many people who use and enjoy it and to see first-hand how our multiple use approach is best serving the needs of Californians and all Americans. Such understanding is particularly important in light of recent legislative proposals now pending in Congress that would discard this 10 year planning effort and replace it with a one-sided approach.

I hope you find the trip informative and leave with a better appreciation of the Desert and its importance.

Ed Hastey

STOP 1- BIGHORN INSTITUTE

Arrive: 8:00 AM
Sunday, June 19, 1988

BIGHORN INSTITUTE

The Bighorn Institute is involved with the investigation of bighorn sheep diseases and their control, especially pneumonia and its viral precursors. In support of the Bighorn Institute's work, BLM has provided a 292-acre Recreation and Public Purposes lease near Palm Desert and contributed $173,000 in challange grant monies since 1985.

Reason for stop:

- ❑ Demonstrate commitment to wildlife in the CDCA from both a protective and proactive basis.
- ❑ Show cooperative efforts have expanded desert bighorn population.
- ❑ Illustrate major cooperative efforts to manage endangered species and natural areas.

* Breakfast hosted by The Bighorn Institute*

Awards:

- ❑ The Bighorn Institute
  For continuing efforts to enhance the management and preservation of bighorn sheep through research.

- Steve McCormick, The Nature Conservancy

  For long standing efforts in support of resource conservation and contributions to Bureau programs throughout the State of California.

- Clayton A. Record, Jr.

  For many years of dedicated service to the California Desert Conservation Area on behalf of the people who use and enjoy it, and leadership in development and implementation of the California Desert Plan.

- San Gorgonio Chapter, Sierra Club

  For assistance in constructing and maintaining the Whitewater segment of the Pacific Crest National Scenic Trail.

COACHELLA VALLEY PRESERVE

The Coachella Valley fringe-toed lizard was listed as a threatened species by the U.S. Fish and Wildlife Service in 1980. BLM worked with other entities (Federal, State, local governments, and interest groups) in developing a viable plan to allow continued growth in the Coachella Valley while ensuring continued survival of this species. The end result of the process was a preserve system based on a combination of BLM land exchanges, the Federal Land and Water Conservation Fund, private donations, and a fee assessed developers in the valley. The Preserve is operated by a manager funded by The Nature Conservancy. Direction and policy is provided by a management team composed of one member of each of the land owning agencies in the preserve.

Depart: 9:30 AM June 19, 1988

Aerial Viewing Enroute

SANTA ROSA MOUNTAINS

Jutting skyward 7,000 feet above plush Coachella Valley resorts, the Santa Rosa Mountains are a true desert mountain treasure. From the creosote bush shrub community on the desert floor, to hidden palm oasis woodlands, up to conifer-capped peaks, the Santa Rosas are a unique blend of plants, animals, and topography. Boulder-strewn rockscapes are sliced by deep canyons and shallow drainages where perennial springs support numerous palm oases. These waterholes are key habitat features for the Nation's largest herd of peninsular bighorn sheep.

Man has been drawn here for centuries too. Pot shards, petroglyphs, and the remains of ancient native American villages document this. Today, man can take advantage of an extensive trail network consisting of former aboriginal pathways and constructed trails. BLM has recommended 136,000 acres for inclusion into the Nation's wilderness preservation system. If designated, the BLM piece will round out a 270,000-acre, tri-agency, wilderness block administered by the Bureau, Forest Service and California State Parks.

MECCA HILLS

The San Andreas Fault jolted it, the winds and rains continuously sculpt it, and now each year thousands of desert recreationists enjoy it as BLM's Mecca Hills Recreation Area. Maze-like badlands and technicolor canyon walls provide a fascinating backdrop for hiker, camper, photographer, off-highway vehicle (OHV) enthusiast, and the student of natural history alike. Wilderness is also part of the Mecca Hills story. All of the Mecca Hills (about 40,000 acres), is presently under wilderness review as part of either the Mecca Hills or Orocopia Mountains Wilderness Study Areas. The northwest portion of the "Hills" which contains the highly scenic Painted Canyon area (approximately 6,600 acres) is recommended by BLM for wilderness designation.

SALTON SEA

The Salton Sea is about 34 miles long and 300 square miles in size. It was formed in 1905 when water being diverted from the Colorado River into the Imperial Canal breached a dike and ran into the Salton Sink. It took two years to stop the flow. This is also the site of ancient Lake Cahuilla, formed in about 1000 AD when the Colorado River shifted its course and flowed into the Salton Sink, forming a fresh water lake.

CAMP YOUNG

Camp Young was headquarters for the eleven divisional camps that collectively composed the Desert Training Center. Camp Young was named for General S.B.M. Young, who fought Indians in the area of Chiriaco Summit and who later became the first Army Chief of Staff. Today, only the rock outlines of the tents, walkways, roads, and miscellaneous artifacts left by the WWII military men are present.

STOP 2- CHIRIACO SUMMIT

Arrive: 10:00 AM
June 19, 1988

Reason for stop:

- ❑ Demonstrate BLM's commitment to protecting/interpreting historical resources.
- ❑ Lend support to public effort to establish the George S. Patton Memorial Museum, which honors General Patton, The Desert Training Center, and those who served in the armed forces.
- ❑ Show interpretation of historical areas is part of Desert Plan effort.

PATTON WWII DESERT TRAINING CENTER

Camp Young, headquarters for and one of the eleven divisional camps comprising the WWII Desert Training Center, was formerly located just west of the summit. Today, only the rock outlines of tents that were erected along the sand streets of Camp Young are visible.

GENERAL GEORGE S. PATTON MEMORIAL MUSEUM

Erected almost exclusively from private donations, the museum is presently in the final stages of construction. Dedicated as a memorial to the Desert Training Center, General Patton and all WWII veterans, it is scheduled for its grand opening on November 11, 1988, the 103rd birthday of General Patton.

Awards

- General Patton Memorial, Inc.

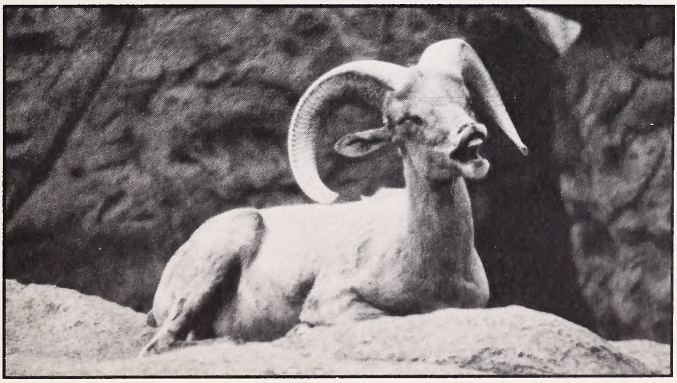
  For volunteer efforts to construct a memorial to General George S. Patton, the Desert Training Center, and the one million men who trained there.

Depart Chiriaco Summit: 11:00 AM
June 19, 1988

Aerial Viewing Enroute

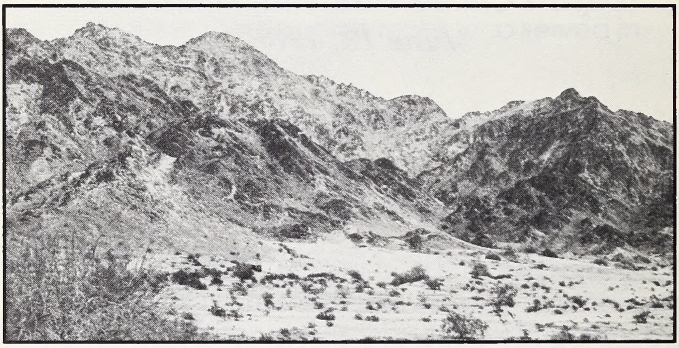
OROCOPIA MOUNTAINS

Orocopia means "Land of Gold", and Utah International and several other mining companies are testing the accuracy of this namesake. The Orocopia Mountains also provide habitat for the county's largest herd of Nelson bighorn sheep, a unique field laboratory for geologists with topography so unusual it once served as a training ground for Apollo astronauts, and recreational opportunities for hiking, sightseeing, and motorized touring.



CHOCOLATE MOUNTAIN AERIAL GUNNERY RANGE

The Chocolate Mountain Aerial Gunnery Range is divided into southern and northern portions. The range was first occupied under the Wartime Powers Act. Subsequently temporary withdrawals have authorized continued use since 1943. Currently, withdrawal of the southern portion of the range pending legislative action. It is anticipated that the bill will be amended to include the northern portion.

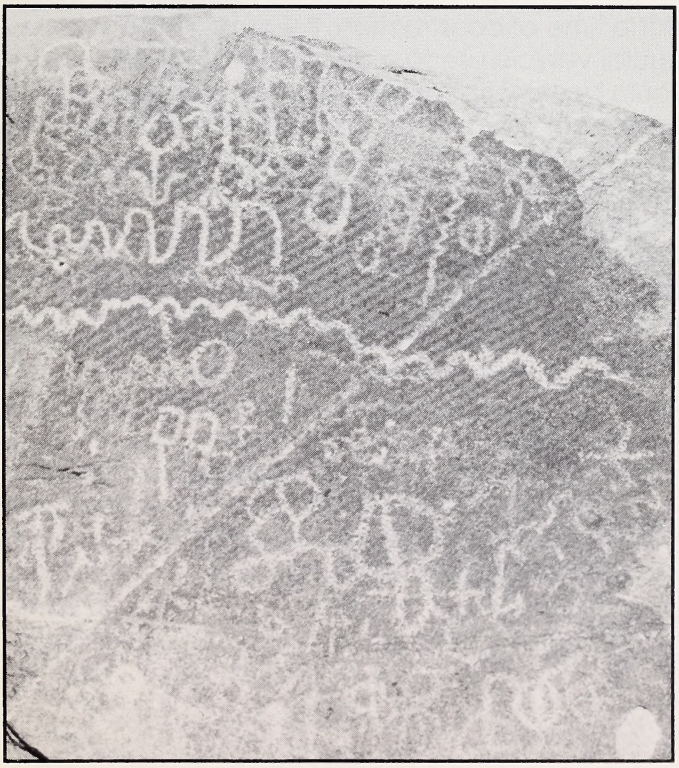


Approximately 227,000 acres of public lands are intermingled with Navy acquired and leased lands, totalling 460,000 acres. This location was selected and occupied by the Navy because its barren, isolated and uninhabited terrain allowed operational missions and training functions to proceed in a physically undeveloped environment without jeopardy to the public's safety.

The Gunnery Range is unique in its use by the military. It is the only area over which live ordnance can be fired. Numerous aircraft squadrons based at locations throughout the United States and Canada use this range for training maneuvers consisting of air-to-air and air-to-ground live ordnance training in a simulated combat environment. The range is open 24 hours a day, seven days a week.

LAKE CAHUILLA SHORELINE

Lake Cahuilla was a prehistoric lake that covered much of the agricultural belt in the Imperial and Coachella Valleys, stretching from the Gulf of California to Palm Springs. Created by natural diversions of the Colorado River, this lake existed during the past 2,000 years. Bountiful plants and animals attracted many prehistoric peoples to its shores. Evidence of their visits remains today and four separate areas of critical environmental concern were designated by the Desert Plan to preserve remnant portions of this archaeological record. Temporary campsites, cremations, and pottery are some examples of the record found. The area provides a source of sand and gravel for local construction as well.



WINDMILLS/WSA 360
(IMPERIAL SAND DUNES AREA)

A primary wilderness value of WSA 360 is its population of burro mule deer. Burro deer inhabit pockets of dense vegetation along the eastern dune margin. Historically, deer in these pockets obtained water from the then earthen-lined Coachella Canal. Following the concrete lining of the canal, deer continued to try to enter and drink from the canal, but were unable to gain a footing on the steep-sided concrete lining. Many drowned. In order to mitigate this impact, the Bureau of Reclamation installed several windmill wildlife water sources between deer habitat and the new canal. Four of these were constructed in WSA 360.

At the time of construction, it was believed that regular vehicle use to maintain the windmills would be minimal. However, the need for heavy equipment use and vehicle entry has increased to a point where an alternative method to pump water must be found. The Bureau of Reclamation, California Department of Fish and Game, and BLM are evaluating several options. The most likely would be submersible pumps driven either by generators that could be packed in, or by solar panels.

STOP 3 - GOLD FIELDS

Arrive: 1:00 PM
June 19, 1988

Reason for stop:

- Illustrate Governmental/private Industry cooperation in managing sensitive resource values.
- Explain tremendous mineral potential of entire CDCA.
- Show mitigation measures can protect sensitive wildlife, cultural, and archaeological values even at large-scale operations.

GOLD MINING IN IMPERIAL COUNTY

Imperial County has been experiencing a gold rush over the last 5 years. Four mines are active and two mines are beginning the environmental review process. All the mines are low grade (0.05 - 0.03 ounces per ton) open pits and utilize heap leaching technology. One mine, the American Girl, will be a combined open pit/below ground operation. Each mine undergoes a rigorous environmental review, including full public involvement and a cumulative impact analysis. By this time next year, some 220,000 ounces of gold (valued at $100 million at $450 per ounce) will be produced annually from these Federal desert lands.

GOLD FIELDS' MESQUITE AND VCR MINES

After intense exploration in the early 1980s, Gold Fields Mining Company developed the Mesquite Mine. This mine, occupying some 3,800 acres, has a projected life of 20 years with estimated reserves of 56,000,000 tons and an average ore grade of 0.05 ounces per ton. About150,000 ounces of gold are produced annually. Additional exploration led to the development of the VCR Project (Vista-Cherokee-Rainbow). These three new pits add 50,000,000 tons of ore with an average ore grade of 0.04 ounces per ton. Both projects, when taken together, represent a "World Class" deposit — the fifth largest in the United States.

* Lunch hosted by Gold Fields Mining Co. *

Awards:

- Gold Fields Operating Company - Mesquite

  For sensitivity in mitigating impacts on the natural and cultural resources of the California Desert Conservation Area.

STOP 4 - IMPERIAL SAND DUNES

Arrive: 2:45 PM
June 19, 1988

Reason for stop:

- ❑ Illustrate balanced multiple use, i.e., open vs. closed area.
- ❑ Explain how BLM is protecting the fragile part of the Dunes.
- ❑ Acknowledge State "green sticker" fund contributions.

IMPERIAL SAND DUNES

The Imperial Sand Dunes recreation area encompasses approximately 180,000/acres within its 40-mile by 5-mile boundary. The dunes provide outstanding opportunities for diversified recreation including Imperial Sand Dunes off-highway vehicle (OHV) riding and ancillary camping. Riding is permitted on more than two-thirds of the dunes—about 118,000 acres of open area. There are two WSAs in the dunes totalling 78,000 acres. The Algodones Outstanding Natural Area (essentially WSA 360) has been recommended as suitable for wilderness designation by BLM. This area has been closed to motorized vehicles since 1973. WSA 362, in the central dunes, has been recommended nonsuitable.

Awards

- California Department of Parks and Recreation

  For cooperation and contributions toward improving management of off-highway vehicles and protection of resources in the California Desert Conservation Area.

Depart Imperial Sand Dunes: 4:00 PM
June 19, 1988

Aerial Viewing Enroute

ROADRUNNER CAMPGROUND/BUTTERCUP AREA

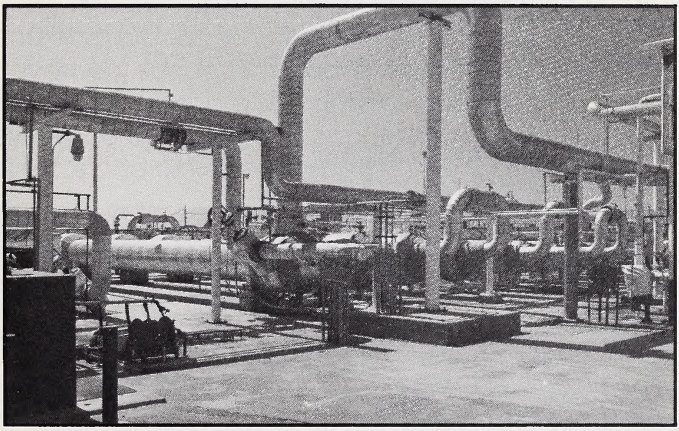
Construction of Roadrunner Campground, located at the end of Gecko Road, will begin in July 1988. This is an approved Off-Highway Vehicle (OHV) Project funded by the California State "Green Sticker" program. The campground will provide 120 camping spaces, a 10 vault toilet facility and a trash collection station.

Another integral part of the development consists of paving 1.8 miles of the existing Grays Well gravel road. The road provides legal access to the intensively used Buttercup Valley OHV area. Both the gravel road and paving project will be constructed with State OHV funds.

If the anticipated use trends continue, additional facilities must be constructed to accommodate the use while managing other sensitive resources present in the area.

EAST MESA GEOTHERMAL DEVELOPMENT AND RESOURCE PROTECTION

The East Mesa region has developed into one of two major geothermal electrical production areas in Southern California. Three generating plants are in operation and two are being built. One other will start construction in 6 months. When completed, this area will be producing 174 megawatts of electricity and returning about $720,000 in annual royalties to the Federal Treasury.



Each facility is supported by a network of production and re-injection wells, powerlines and access roads. This has been accomplished with minimum impacts to sensitive archaeological values and rare wildlife resources. Numerous prehistoric sites are located in the general area, owing to the presence of the prehistoric Lake Cahuilla shoreline.

In addition, portions of the area are considered crucial habitat for the flat-tailed horned lizard, a candidate for both State and Federal listing as threatened or endangered. Geothermal operators are working with BLM to alter development plans and facilities in order to minimize impacts.

PLANK ROAD

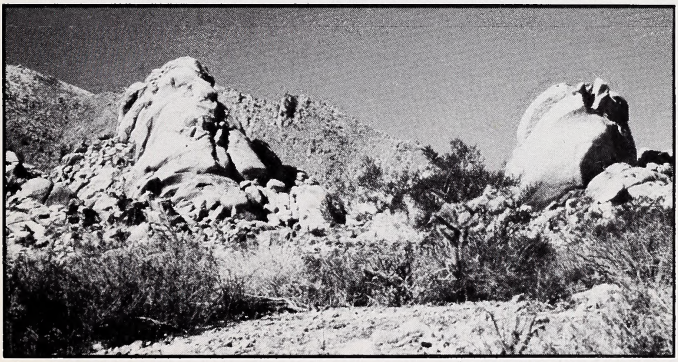
The Plank Road represents a glimpse into the pioneer spirit that helped settle Imperial Valley. Used from 1916 to 1926, this wooden road was important for initial economic growth and development. It provided early motor vehicles with the only access across the treacherous Imperial Sand Dunes. Sections of the road were moved by teams of horses when made necessary by shifting sands. BLM, in cooperation with various groups, has fenced a 1,500-foot section of the road. BLM's El Centro office intends to fully implement the Plank Road ACEC Management Plan as a result of a State of California Green Sticker Grant.

COACHELLA VALLEY-NILAND-EL CENTRO 230 KV TRANSMISSION LINE PROJECT

In November 1987, a right-of-way was issued to Imperial Irrigation District to construct, operate, and maintain a double circuit 230 KV alternating current transmission line from the Coachella Valley Substation near Indio, south along the eastern side of the Salton Sea, to a new substation near the community of Heber, approximately 5 miles north of the Mexican border. Of the 115-mile route, intermittent public lands constitute approximately 26 miles, or 310 acres. The line is currently under construction. The new line will transmit electrical energy provided by geothermal developers in the Imperial Valley to Southern California Edison's electrical grid. The developers have contracts to sell their electricity to Edison, but because the Imperial Irrigation District does not have sufficient capacity on their system, the new line was necessary. The project is being funded entirely by geothermal developers. Construction is expected to be completed by October 1988.

PILOT KNOB

Pilot Knob is an area of critical environmental concern, designated because of special Native American values and archaeological resources. The management plan for this area was completed in 1982. There are legends about this solitary mountain, which served as part of the Quechan Indian's death ceremonies. The mountain holds a spirit house and its flanks serve as pallets for rock art and prehistoric ground figures. Also known as geoglyphs or intaglios, these figures appear to be related to Indian myths and illustrate the inherent fragility of desert pavement surfaces. In addition to these ground figures, Pilot Knob also contains abundant evidence of stone tool manufacture. Thousands of tools and flakes are present.



INDIAN PASS ACEC

Indian Pass is an ancient trail through the Chocolate Mountains. The area contains Native American values and is designated as an area of critical environmental concern. The ACEC is noteworthy since it contains several aboriginal trails and dozens of inscribed cobbles of unknown age and function. The completed ACEC Management Plan prohibits gem and mineral collection in order to protect archaeological features.

WILD HORSES AND BURROS

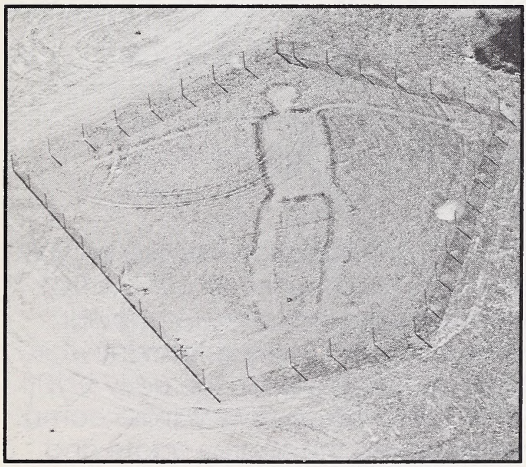
In 1984, the Colorado River Herd Management Area (HMA) Plan was completed and approved. In the areas administered by California BLM, wild burros are significantly above target population levels, and wild horses are below prescribed levels. Target population size for the Chocolate/ Mules HMA is 22 burros, and despite the removal of about 50 burros this spring, the population is estimated at more than 220 animals. Proposed target population for the Picacho HMA is 42 horses. The 1980 inventory found the population to be 45 animals, but in 1984, no horses were sighted on the California side of the Colorado River.

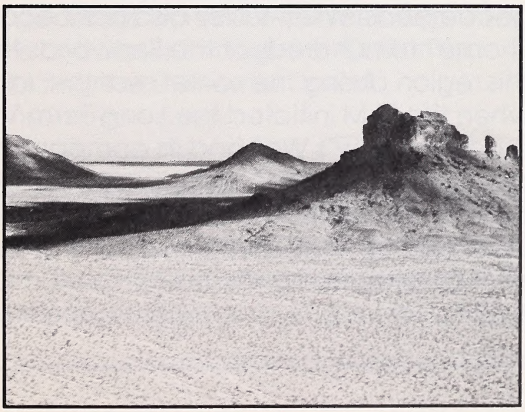
MILPITAS WASH

The Milpitas Wash Wildlife Habitat Management Area (WHA) contains more than 180,000 acres of highly valuable habitat for the burro mule deer. The WHA consists of a large series of desert wash systems which provide cover as well as food for the deer. These washes also provide a highly diverse habitat for migratory birds. The desert tortoise, a proposed Federally threatened species, also occurs throughout the WHA. Tortoise densities here are generally 20-50 animals per square mile but range up to 100 per square mile. The area is managed jointly by BLM and California Department of Fish and Game under the authority of the Sikes Act.

SINGERS GEOGLYPHS ACEC

The Singers Geoglyph ACEC contains a series of large, enigmatic ground figures. These geoglyphs were created by scraping away the dark desert pavement to expose the lighter sub-soil. The age and meaning of these serpentine figures is unclear, although some archaeologists believe that they were made thousands of years ago in an attempt to stop environmental change. These geoglyphs were fenced several years ago in a cooperative effort involving Gold Fields Mining Co., Imperial Valley College and BLM.





STOP 5 - WILEY'S WELL

Arrive: 5:15 PM
June 19, 1988

Reason for stop:

- ❑ Demonstrate recreation aspects of Desert and need for vehicular access for most people to enjoy public lands.
- ❑ Allow local citizens to discuss Desert issues.
- ❑ Provide Long Term Visitor Area camping experience.

WILEY'S WELL

Built next to the old well dug by A. P. Wiley in 1908 as a water supplement along the Bradshaw Trail, the Wiley's Well campground is now a popular retreat for both weekend and long-term snowbird campers. Originally developed in the early 1970's as a quiet desert get-a-way and as a base camp for rockhounds exploring the nearby agate and geode beds, Wiley's Well also has become "home" to hundreds of the Snowbirds that roam this region during the winter months. In 1983, when the BLM initiated the Long-Term Visitor program Wiley's Well and its companion campground 3 miles to the south (Coon Hollow), were collectively designated as the Mule Mountain LTVA. Today Mule Mountain is one of 8 different LTVAs managed by the BLM in California and Arizona for long-term snowbird camping.

Awards:

- Al Kratz, Long Term Visitor Area Volunteer Host

  For dedicated volunteer service to the public as a campground host.

- Blythe Chamber of Commerce

  For dedicated support and assistance with the Midland Long-Term Visitor Area.

- Quintana Gypsum

  For a generous donation to benefit the Midland Long Term Visitor Area and its users.

- The City of Blythe

  For support for and participation in the California Desert Conservation Area Plan.

- El Paso Natural Gas, Inc.

  For generous contributions for interpretive signs and kiosks throughout California, including the California Desert Conservation Area.

* Barbeque dinner hosted by City of Blythe, Blythe Chamber of Commerce with preparation by Veterans of Foreign Wars.*

Depart Wiley's Well: 8:00 AM Monday, June 20, 1988

Aerial Viewing Enroute

CORN SPRINGS CAMPGROUND

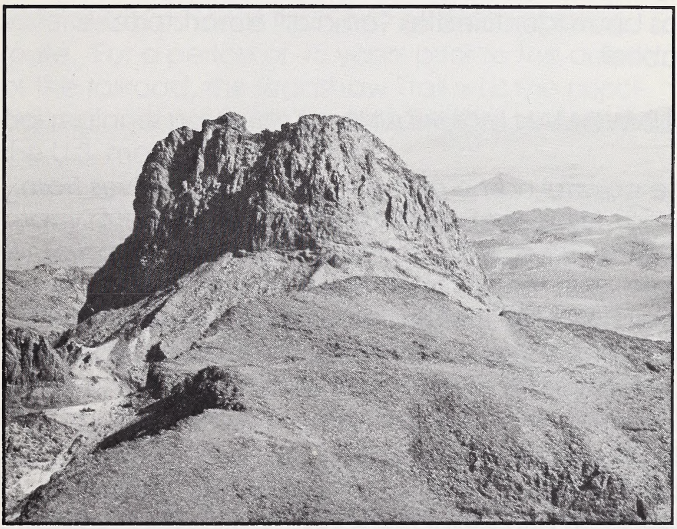
Operating as a campground since the 1960's, Corn Springs shares rich and diverse wildlife and vegetation, unique archaeological sites, and beautiful scenic values with its visitors. Deep in a canyon in the Chuckwalla Mountains, the Corn Springs oasis has approximately 50 mature native California fan palms that provide a home for many creatures. The area was designated an area of critical environmental concern in the California Desert Plan, and includes an interpretive trail passing by Native American petroglyphs and through the palms.

IRON MOUNTAIN DIVISIONAL CAMP

One of 11 Desert Training Center training camps, Iron Mountain includes many historic resources from World War II. Acres of stone work still line camp roads and walkways, and rock designs of company and national symbols are visible. An altar and chapel remain, although not intact. Perhaps the most unique feature of the camp was and is a 200' x 175' relief map built into the desert floor. A management plan calling for stabilization, protection, and interpretation of the Camp has been written, and will be implemented as funding and volunteers become available.

CADIZ VALLEY

AridTech negotiated a major exchange with BLM and Santa Fe-Pacific Realty Corporation (SF-PRC) to consolidate into private ownership much of northern Cadiz Valley for the purpose of growing table grapes. The exchange allowed BLM to acquire 19,000 acres of SF-PRC lands in the East Mojave National Scenic Area, and has given the local economy a significant boost.



TURTLE MOUNTAINS

The Turtle Mountains comprise one of the larger wilderness study areas in desert. BLM has recommended 105,000 acres as suitable. A portion of the area—93,000 acres—also has been designated as a National Natural Landmark. Key features are the twin Mopah Peaks, the oasis at Mopah Spring, and Castle Rock. Very limited mineral interest in this area has been expressed over the past 8 years, but it remains a popular rockhounding area for many people.

WARD VALLEY LOW LEVEL WASTE SITE

Ward Valley is one of two final sites being studied by U.S. Ecology (the other—Silurian Valley—is northwest of Baker), for a low level radioactive waste site. It is the preferred location due to geological stability, depth to water, and relative safety from flash flooding. Fifty acres would be developed for the site, but the State will select 640 acres as part of its State selections when the final decision is made. A major issue to be resolved is the impact on desert tortoises since Ward Valley has been identified as "crucial" desert tortoise habitat.

OLD WOMAN MOUNTAINS

The colorful name of these mountains derives from a rock feature allegedly resembling an old woman wrapped in a shawl. The Old Woman meteorite, the second largest meteorite ever found in the United States, was discovered in 1977 on the mountain's southwest slopes by prospectors looking for abandoned mine sites.
The Smithsonian Institute removed a 942-pound section of the 6,070 pound rock for research purposes, and returned the meteorite to BLM for display at the California Desert Information Center in Barstow.

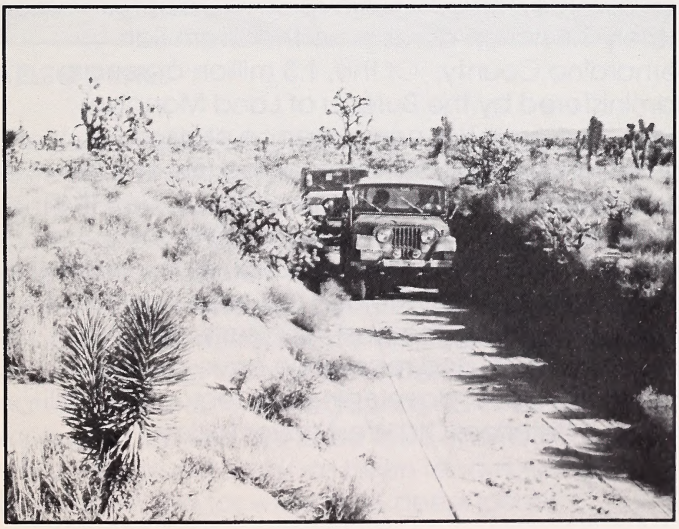
VULCAN MINE

Located at Foshay Pass in the Providence Mountains, this mine was a key supplier of iron ore to the Kaiser steel mills in Fontana during World War II for use in construction of Liberty Ships. Mining was subsidized by the United States since the expense was greater than potential profits. Ore was removed by truck to Kelso and shipped by rail to the Los Angeles Basin. Operations stopped in late 1940's.

THE BRADSHAW TRAIL

In 1862, William Bradshaw established the first overland stagecoach route between the settlement of San Bernardino and the new found gold fields along the Colorado River. Using information provided to him by Chief Cabazon of the Desert Cahuilla Indians, Bradshaw successfully promoted his trail that featured relatively abundant water, and most importantly, a travel time that was several days shorter than any other competing route. For a period of 15 years prior to the arrival of the railroad, the Bradshaw Trail was the principal regional pathway for prospectors, settlers, and the U.S. mail.

Today, 65 historic miles of the Bradshaw Trail remain intact across the California Desert District. More than just an historical footnote, the Bradshaw Trail still serves as an important access route for modern day desert residents and visitors whether at work or in play.



STOP 6 - KELSO DUNES

Arrive Kelso Dunes: 10:00 AM
June 20, 1988

Reason for stop:

- ❑ Demonstrate BLM's ability to protect sensitive areas such as Kelso Dunes.
- ❑ Illustrate historical and current multiple-use nature of the East Mojave National Scenic Area.
- ❑ Demonstrate cooperative ventures with University research and the Kelso Depot Fund.
- ❑ Review needs for energy/right-of-way corridors.

EAST MOJAVE NATIONAL SCENIC AREA

Designated in 1980 as America's first National Scenic Area, the East Mojave covers approximately 1.5 million acres in northeastern San Bernardino County. Of this, 1.3 million acres are administered by the Bureau of Land Management. The area is a convergence of desert ecosystems, where elements of the low or Colorado Desert, the high or Mojave Desert, and the cooler Great Basin Desert all can be found. Although its permanent population is only around 500 people, the East Mojave has seen significant human use during the past 100 years. Livestock grazing, mining, and recreation have played important roles in developing the region, and still impart a historical Old West flavor today.

GRANITE MOUNTAINS NATURAL RESERVE

Composed of 2,200 acres of University of California-owned land and 6,720 acres of public lands, the Granite Mountains Natural Reserve is an outdoor classroom for thousands of students. Teaching use is broad-based, ranging from an architecture class specializing in solar passive designs to natural history and field geology classes. In addition, research projects initiated by University and public agency scientists are studying such topics as soil genesis on remnant alluvial fans, root development in heavily compacted soils, vegetation succession in recently burned and grazed areas, and the influence of cattle on desert bighorn sheep.

KELSO DUNES

The Kelso Dunes are one of the highest dune systems in North America, rising to a height of 700 feet. Unique flora and fauna seem to flourish in the area, providing outstanding displays of evening primrose, desert willow, desert sunflower, and desert lily, often edged by the symmetrical tracks of native wildlife, frequently lizards and insects. Another unique feature is the Dunes' "booming" nature, caused by shifting sands. Closed to motorized vehicle use since 1973, the 45,000-acre wilderness study area has been recommended by BLM as suitable for wilderness designation.

CALIFORNIA DE

N E V

Ridgecrest

10 FORT IR

11
DESERT TORTOISE
NATURAL AREA

Bake

OLD MOJA
& KELBAKE

Mojave

Barstow

12 GEORGE AFB

Victorville

Pasadena

Los Angeles

BIGHORN SHEEP
INSTITUTE

1

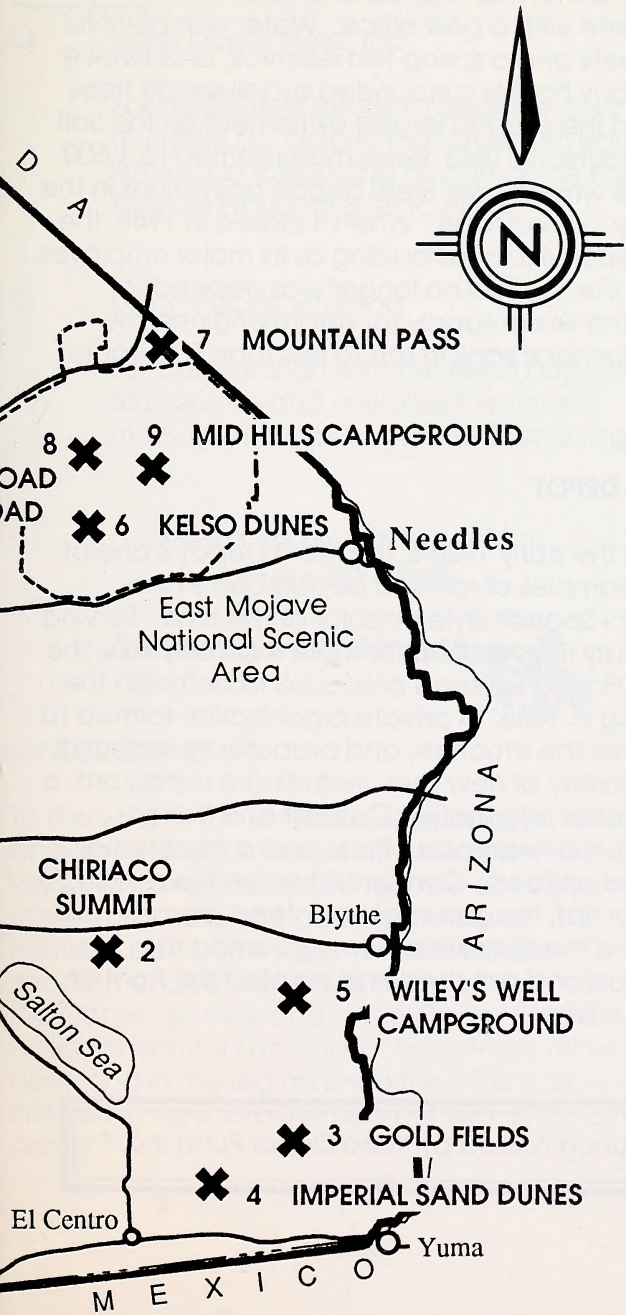
Pacific Ocean

TAKE
PRIDE IN
AMERICA

San Diego

RT CONSERVATION AREA

OUR MAP



KELSO

The community of Kelso owes its existence to the Salt Lake Route of the Union Pacific Railroad. In 1905, the line was finished and Kelso was born, complete with a post office. Water was plentiful from wells and a spring-fed reservoir, and twelve company houses surrounded by tall shade trees formed the second largest settlement on the Salt Lake Route. In 1943, Kelso mushroomed to 1,500 people when Kaiser Steel began operations in the nearby Vulcan Mine. When it closed in 1948, the town returned to railroading as its major employer. When the railroad no longer was dependent upon the water supply for steam engines, the town further shrank in size to less than 50 people.

KELSO DEPOT

Built in the early 1920's, the Kelso Depot is one of two examples of railroad depots built in the pseudo-Spanish style popular at the time. Serving as a busy railroad hub for more than 60 years, the Union Pacific Railroad proposed to demolish the building in 1985. A private organization formed to preserve the structure, and proposes to reopen it for a variety of new uses, including a restaurant, a BLM Desert Information Outpost and Ranger station, the Kelso post office, and a museum of railroad artifacts. Concentrating on the building's exterior first, the group of volunteers already has restored the sprinkler system, groomed the grounds, and patched and painted the front of the building.

* Lunch hosted by Kelso Depot Fund Inc. *

Awards:

- Kelso Depot Fund, Inc.

  For dedicated efforts to preserve and revitalize an historic monument to early American railroading as part of the East Mojave National Scenic Area.

- Union Pacific Railroad

  For cooperation with the Kelso Depot Fund to preserve and revitalize this historic monument for public use and enjoyment.

Depart Kelso Dunes: Noon
June 20, 1988

Aerial Viewing Enroute

CINDER CONES

To the west of Cima Dome, several layers of ancient lava punctuated by more than 30 extinct volcanic cones are noted for their petroglyph-covered basalts and geologic features. The northern part of the lava field is a suitably recommended wilderness study area. Most of the Cones are included in the Cinder Cones National Natural Landmark. Two cinder mines operating in the region since the 1950's allow an interesting view into the heart of two of the cinder cones.

CIMA DOME

This 70-square mile, gently rounded granite dome is the most symmetrical domed rock structure in the United States. It is covered by one of the desert's finest Joshua tree forests, which, besides being an intriguing display of an unusual plant community, is also excellent habitat for wildlife. The area is a proposed National Natural Landmark, and is protected by an 18,000-acre withdrawal from mineral entry in effect since 1972.

CLARK MOUNTAIN

The highest mountain in the East Mojave (7,929 feet), Clark Mountain is capped by a large grove of white fir set among very scenic limestone ridges and canyons. To protect the rugged splendor of the area, a vehicle closure has been in effect since 1973. The Desert Plan designated it as an area of critical environmental concern in recognition of the mountain's scenic, cultural, and wildlife resources. Large-scale mining operations have dominated the area around the mountain for several decades, for the limestone layers of Clark Mountain are surrounded by highly mineralized, metamorphic rocks.

COLOSSEUM MINE

The Colosseum Mine, located in Clark Mountain near the intersection of Interstate 15 and the California/Nevada border, is operated by Colosseum California, Inc., a subsidiary of an Australian firm. Covering 900 acres of desert landscape, the mine originally operated in the 1860's, but closed down in 1942. The company expects to move 12 million tons of ore to recover 775,000 ounces of gold during the 10-year life of the open pit, cyanide vat operation.

gold during the 10-year life of the open pit, cyanide vat operation.

STOP 7 - MOUNTAIN PASS

Arrive Molycorp Mine: 12:30 PM
June 20, 1988

Reason for stop:

- ❑ Illustrates importance of Desert minerals and continued access to them.
- ❑ Shows site supplies 97 percent of the Nation's rare earths.
- ❑ Shows many mining claims exist on public and private lands and the potential is great for further deposits.

MOUNTAIN PASS MINE

Many small mines for lead, zinc, copper were established in this area between 1900 and the 1920's. Rare earths were not discovered until 1949, well before any market existed. Molycorp bought claims in the area in 1950-51, and helped develop markets through research and development. This site produces most of the free world's rare earth minerals. Uses for the elements include as a catalyst for cracking petroleum crudes, in the manufacture of glass-grinding and polishing compounds, as an activator for the red phosphor used in color TV tubes, as an additive to glass rendering it opaque to ultraviolet light, and in alloys needed to manufacture new high-efficiency electric motors.

Awards:

❑ Molycorp, Inc.

For contribution to the California Desert Ranger force, leading to increased protection for the East Mojave National Scenic Area.

Depart Mountain Pass: 2:15 PM
June 20, 1988

Aerial Viewing Enroute

DINOSAUR TRACKWAY ACEC

Located in the Mescal Range near Mountain Pass, this is the only known occurrence of fossil Mesozoic reptile tracks in California. The tracks are found in a bedding plane of Aztec sandstone and may be more than 180 million years old. Three species of bipedal, ostrich-like dinosaur footprints have been recorded, and four species of quadrupedal reptiles. To protect the site, BLM is discouraging access and unsupervised use of the area, while encouraging paleontological inventory and research by accredited groups or institutions.

IVANPAH VALLEY

This creosote-covered bajada, located between the Ivanpah and New York Mountains, contains crucial desert tortoise habitat. A permanent desert tortoise study plot has been located here to assess possible long-term Impact to the tortoise from cattle grazing.

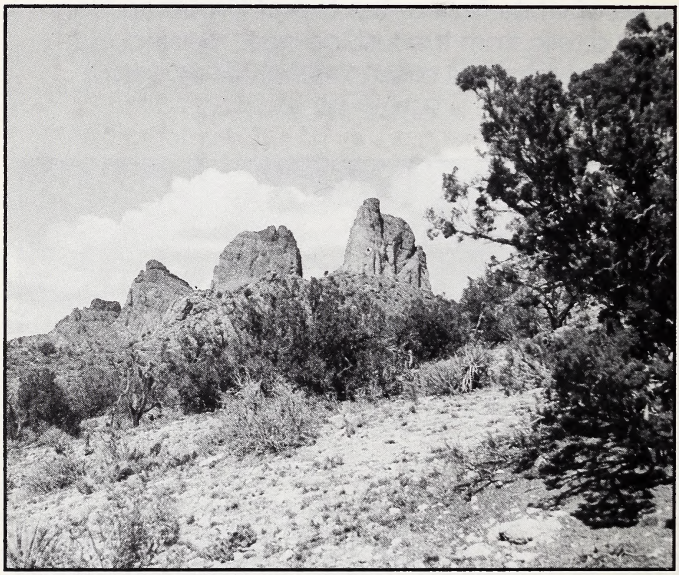
NEW YORK MOUNTAINS

One of the highest areas in the East Mojave, the New York Mountains consist of two distinct regions divided by the Ivanpah Road. To the west, the mountains are characterized by a steep, sharply eroded north face and a more gently sloping south flank carved out by long canyons. A small grove of white fir near the top of Caruthers Canyon is a relic from the last ice age. Several old mines are located along the higher mountain ridges.

To the east of Ivanpah Road, the New York Mountains are dominated by a group of very scenic reddish spires known as the Castle Peaks. This section was designated an area of critical environmental concern in recognition of its significant scenic quality and wildlife and vegetation resources, and has been recommended by BLM as suitable for wilderness designation.

CASTLE MOUNTAIN PROJECT

The Castle Mountain Project is a proposed surface gold mining and processing project in the Hart Mining District southeast of Ivanpah. Viceroy Gold Corporation plans to construct and operate an open-pit, heap-leach gold mine on 670 acres of public lands and 28 acres of patented mining claims. An environmental impact statement currently is being developed.



MARL SPRING

What may have been the most vital water source on the Mojave Road is found at Marl Spring, for after this waterhole, the Road descended into the more inhospitable desert and Devil's Playground. Once the site of an army post, a few stone ruins remain today. In more recent history, Marl Springs became the headquarters for one of the earliest cattle operations in the East Mojave. Today, a corral and watering facilities are still used, but there are no buildings.

STOP 8 - MOJAVE ROAD

Arrive Mojave Road: 2:45 PM
June 20, 1988

Reason for stop:

- ❑ Emphasize importance of vehicular access and family outings in Desert.
- ❑ Show that vehicular access is not detrimental to resources if properly managed.
- ❑ Discuss wilderness designations and differences among "roads," "ways," and "routes."

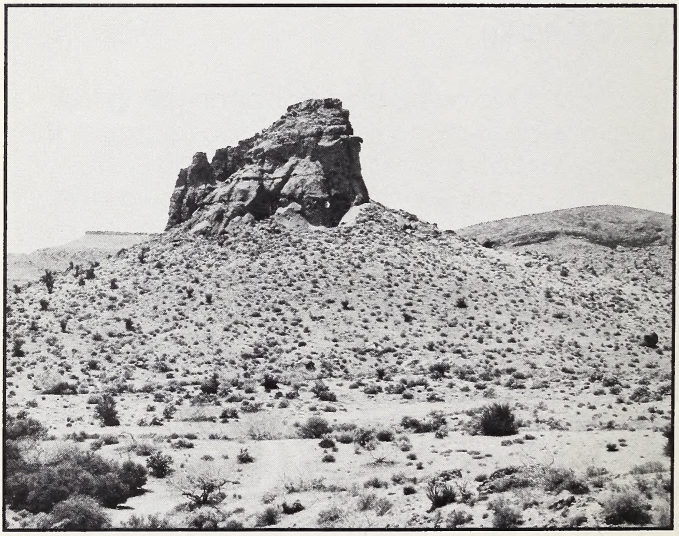
MOJAVE ROAD

The ancient Mojave Indian trail connecting the Mojave villages along the Colorado River with the California coast crosses 130 miles of the East Mojave National Scenic Area. The trail was the trade route used by the Indians to exchange food and other products for sea shells and various goods from coastal Indian villages. Spanish missionary Francisco Garces was shown the trail by Indians in 1776, and by the early 1800's, numerous American mountain men, including Jedediah Smith and Kit Carson, were using the trail.

With the aid of camels, the U.S. Army shaped the trail into a wagon road in the late 1850's, and it became known as the Mojave Road or Government Road. The trail became one of the most important in the West, being used by the U.S. military, the postal service, and the wagon trains of California pioneers. Today, the Mojave Road is a favorite four-wheel drive tour of the East Mojave. It currently is being considered for inclusion into the National Trails System.

EAST MOJAVE HERITAGE TRAIL

A longer, 700+ mile route touring the East Mojave is now being developed by the Friends of the Mojave Road. The Heritage Trail has been divided into four segments, with a guide book to be written for each. The first guidebook, Needles - Ivanpah, was published in Fall 1987. The second segment, Ivanpah - Rocky Ridge, will be published in Fall 1988; the draft is currently being reviewed by the Needles Resource Area staff. The third and fourth segments will be published in 1989 and 1990 respectively, with the entire loop beginning and ending in Needles.



HOLE-IN-THE-WALL

The Hole-in-the-Wall area is well known for its sculpted volcanic rock walls and towers, and for its Old West character. This is cowboy country, with pole corrals, windmills, and loading chutes. Hole-in-the-Wall also has a campground, fire station, and desert information station.

STOP 9 - MID HILLS CAMPGROUND

Arrive Mid Hills: 6:00 PM
June 20, 1988

Reason for stop:

- ❑ Demonstrate community support for Desert Plan in the EMNSA.
- ❑ Show EMNSA is a blend of natural and man-made features and is a classic multiple -use show place .
- ❑ Emphasize importance of cattle grazing.

MID HILLS CAMPGROUND

The Mid Hills are a low, rounded series of exposed granite crags and boulders. Dense stands of sage and other high desert brush exhibit characteristics of the Great Basin area. Located in a pinyon-juniper woodland, Mid Hills Campground provides a central location for hiking and sightseeing. The northern campsites offer good views of Cima Dome.

Dinner hosted by High Desert Cattlemen's Association

Awards:

- Friends of the Mojave Road

  For efforts to educate the public in desert etiquette through your interpretive guide books for the East Mojave National Scenic Area.

- Southern District, California Association of Four Wheel Drive Clubs

  For dedicated volunteer work to maintain the historic Mojave Road for the enjoy ment of the American public.

- Tim Henshaw

  For personal campaign to help keep public lands in the East Mojave National Scenic Area free from litter.

- Needles Wildlife Club

  For volunteer efforts to develop and maintain wildlife water sources on public lands in the California Desert Conservation Area.

- Bighorn Sheep Society

  For efforts in preserving and expanding bighorn sheep populations.

Secretary swears in new Desert Ranger: William T. Wiley.

Leave Mid Hills: 8:00 AM Tuesday, June 21, 1988

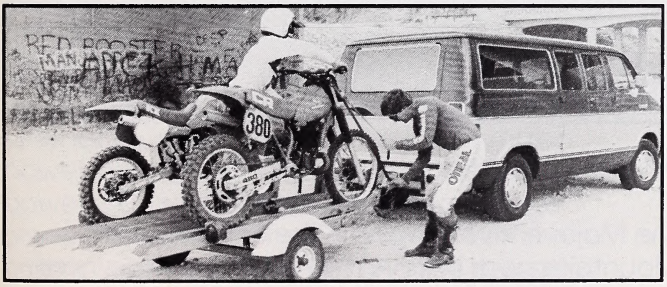
Aerial Viewing Enroute

DEVIL'S PLAYGROUND

Sand carried into Soda Lake by historic flooding of the Mojave River has been blown southeast by prevailing winds to cover a large expanse of land known as the Devil's Playground. Key landmarks in the area are the Cowhole area concentrations of bighorn sheep in the California Desert. The region contains important archaeological sites and excellent wildlife habitat.

RASOR OFF-HIGHWAY VEHICLE OPEN AREA

Attracting relatively few visitors but offering a diverse terrain, the Rasor OHV Open Area is a favorite of those desiring to get away from the crowds. It has plenty of open space for vehicle free play, as well as a variety of challenges.

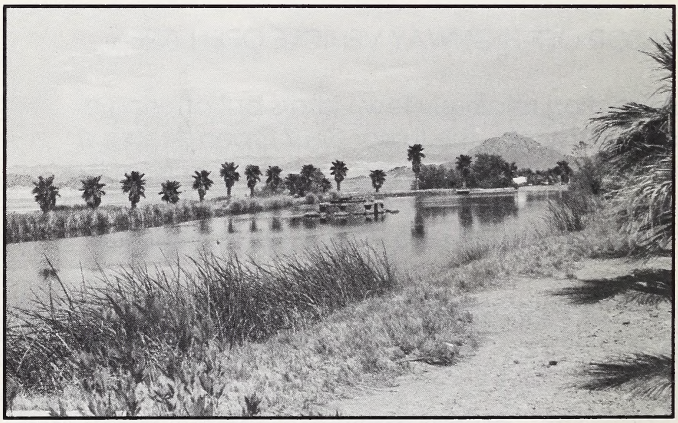


SODA LAKE

The only major playa in the East Mojave National Scenic Area is also the lowest area in elevation (920 feet above sea level). The lakebed is closed to vehicle use with the exception of the Mojave Road.

SODA SPRINGS

Formerly a resting and watering stop for Indians, explorers, the military, and settlers; later a watering stop for the Tidewater and Tonopah Railroad; and then a health and religious resort called "Zzyzx"; Soda Springs has had a varied history revolving around its source of water. Found on the western shoreline of Soda Lake, Soda Springs is now the home of the Desert Studies Center, operated by a consortium of southern California colleges. It also is home for the endangered Mohave tui chub, which lives in three ponds fed by the springs. Soda Springs was designated an area of critical environmental concern due to its wildlife and cultural resource values.



AFTON CANYON

The Mojave River begins in the San Bernardino Mountains near Lake Arrowhead and flows north through Victorville and Barstow, where it turns northeastward and eventually disappears in the Devil's Playground. At Afton Canyon, the river has cut a steep-walled gorge through multicolored rock layers. Here the water flows most of the year, attracting wildlife and birds. A BLM campground is situated in the canyon.

BOULDER CORRIDOR

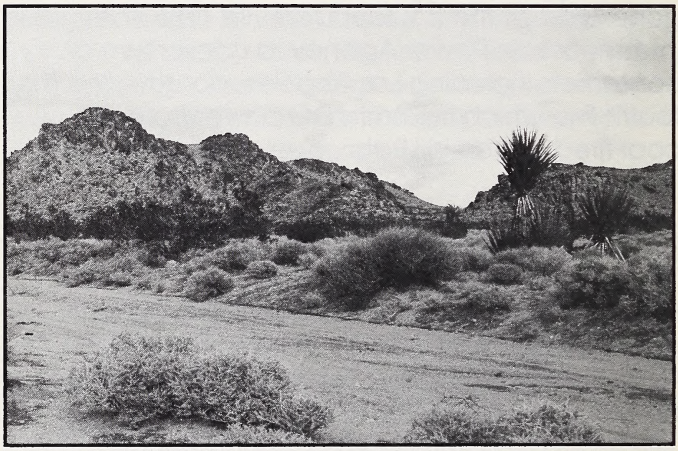
From generating plants in Nevada and Utah, the four transmission lines within the Boulder Energy Production and Utility Corridor, all on public lands, are providing more than 1.7 million volts of electrical power to the Southern California area. Completed in 1944 by the City of Los Angeles, the three original lines transmit AC electrical power generated at the Boulder Dam. In 1985, the Intermountain Power Agency, a consortium of consumers including Los Angeles, constructed the fourth line which transmits DC power from a coal-fired source in Utah.

FORT IRWIN EXPANSION - EAST AND SOUTH

Fort Irwin is now 34 miles from east to west and about the same from north to south. Currently, there is a proposal from Fort Irwin to expand the facility. BLM is evaluating three preliminary alternatives for withdrawal of public lands, including portions of the adjacent areas to the south and east of the Fort. Two of the alternatives, including the proposed action, would extend six to eight miles to the east to include portions of the South Avawatz and Soda Mountains. The third alternative, developed to avoid the major powerline corridor that supplies one-third of the power to the LA Basin, extends east to the powerline right-of-way. To the south, the two alternatives extending beyond the powerline reach to I-15 and below. The area just north of Calico is a common southern boundary for the alternative. Two of the three alternatives include Coyote Lake.

BARSTOW TO VEGAS RACE START

The B to V start area is also called the "bomb run" or start cone. Bomb run means the area from the start line, 400 riders wide, to the strobe light. It is at this point that the course narrows to a 200 foot corridor. The start cone is about four miles long. This area is within the proposed Fort Irwin expansion.



STOP 10 - FORT IRWIN

Arrive Fort Irwin: 9:00 AM
June 21, 1988

Fort Irwin was reactivated in 1981 as the U.S. Army's National Training Center. Units from throughout the U.S. travel to Fort Irwin National Training Center on 20-day training rotations. Using sophisticated laser equipment, each rotation of approximately 3,500 soldiers and their equipment train against a mock Soviet "opposing force" permanently stationed at Fort Irwin.

The Secretary and his party will be given a joint briefing by key personnel of military installations in the California Desert, including China Lake Naval Weapons Center, George Air Force Base, Edwards Air Force Base, Fort Irwin, and Twenty-Nine Palms Marine Base.

Reason for stop:

- ❑ Illustrate importance of military in California Desert.
- ❑ Explain how military needs were built into Desert Plan.
- ❑ Show how public benefits from cooperation of BLM and military, both from a national security standpoint and also from an economic standpoint.

Awards:

❑ China Lake Naval Weapons Center

For outstanding cooperation and support provided by the U.S. Navy, China Lake Naval Weapons Center in the unique association between the Departments of Defense and Interior to develop geothermal energy, a clean domestic energy source which will help ensure our Nation's security and energy independence.

Depart Fort Irwin: 11:00 AM
June 21, 1988

Aerial Viewing Enroute

GOLDSTONE TRACKING STATION

Spacecraft used in the U.S. unmanned lunar and planetary exploration are remotely controlled by the Deep Space Network, a facility of NASA. The Deep Space Network is operated by the jet propulsion laboratory in Pasadena and is composed of three main elements: the Deep Space Station located here at Goldstone, and near Canberra, Australia and at Madrid, Spain. The stations of the Deep Space Network are 120 degrees apart in longitude so that the spacecraft is always within the field of view of at least one of the Deep Space Stations.

FORT IRWIN EXPANSION WEST

All three preliminary alternatives for the expansion of Fort Irwin include a six-mile by 10-mile area of public lands between Goldstone and Paradise Range. The western-most alternative for expansion includes an additional area 15 miles north to south and 18 miles east to west, lying west of the Goldstone addition. This would include public and private lands from the Naval Weapons Center, south of Fossil Canyon and Mud Hills, and west to Black Mountain, including Inscription Canyon and Opal Mountain.

LAND TENURE ADJUSTMENT PROJECT

The supersonic corridor used by Edwards Air Force Base and others is a 46 mile long slice of the desert sky from Fort Irwin west to the San Bernardino County Line, just beyond Fremont Peak and Highway 395. Both low level (about 500 feet above the surface) and medium level supersonic flights occur, with several hundred supersonic trips per year. The land tenure adjustment project would block up public lands 46 miles wide and 18 miles deep to protect the corridor and public land values, such as cultural, paleontological, and wildlife habitat values, as well as mining. The eastern 24 miles of this area may be subject to conflict with the proposed expansion of Fort Irwin.

SUPERIOR DRY LAKE

Colorful sails frequently dot the Superior Dry Lakes on weekends, as the popularity of land sailing increases. The lakes are closed to motorized vehicles, and contain sensitive wildlife, cultural, and Native American values.

INSCRIPTION CANYON/BLACK MOUNTAIN PETROGLYPH AREA

Black Mountain, an extinct volcano rising to an elevation of 5,259 feet, is considered by many Indian groups to have religious significance. Ceremonial areas, house rings, bedrock mortars, petroglyphs, pictographs, and flint chips have been found. In a small arroyo about 200 yards long and 10 to 50 yards wide, more than 200 petroglyphs have been found, thus earning the arroyo the name "Inscription Canyon". Although many were destroyed by vandals, the remaining examples still fascinate visitors.

HARPER DRY LAKE

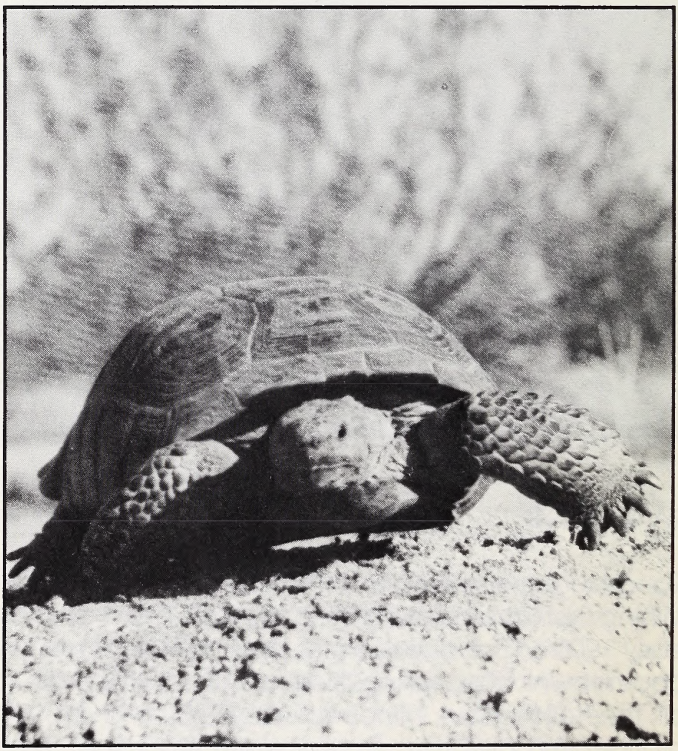
This area has been designated an area of critical environmental concern to protect quality marsh habitat. It is closed to motorized vehicles. The marsh has been frequented by the Yuma clapper rail and the bald eagle.

RANDSBURG

Randsburg is one of four communities in the Rand Mining District created during the late 1800's and early 1900's. The discovery of gold in 1895 made boom towns of Johannesburg and Randsburg. In all, the Yellow Aster Mine returned $16 million in profits to its operators. During World War I, the area was mined for tungsten ore and sheelite ore. In 1919, silver was discovered on Red Mountain. More than 100 mines were operating in the area by 1920. Today, the communities are still home for more than 300 miners.

RAND MOUNTAINS/FREMONT VALLEY

In 1980, BLM established an area of critical environmental concern for a portion of the Western Rand Mountains and Fremont Valley area. Numerous conflicts between mining, desert tortoise, sheep ranching, off-highway vehicle, hunting, camping, and other recreation interests have made balancing uses and resource protection extremely difficult. BLM is now undertaking a coordinated resource management planning effort to resolve these conflicts.



STOP 11 - DESERT TORTOISE NATURAL AREA

Arrive Desert Tortoise Natural Area: Noon June 21, 1988

Reason for stop:

- ❑ Illustrate BLM's commitment to preservation of sensitive resources such as Desert tortoises.
- ❑ Show how Area of Critical Environmental Concern (ACEC) designations, such as DTNA, are important part of Desert Plan
- ❑ Show commitment of funding and manpower to ensure acquisition and maintenance of habitat.

DESERT TORTOISE NATURAL AREA

Established by BLM in 1976 to provide protection and enhancement of habitat supporting the highest known densities of the desert tortoise, the Desert Tortoise Natural Area also was designated an area of critical environmental concern in the 1980 Desert Plan. It consists of approximately 16,000 acres of public land, about 3,000 acres of land acquired by other agencies/ organizations, and 5,000 acres of private land. BLM manages the area cooperatively with the California Department of Fish and Game, the Desert Tortoise Preserve Committee, and the Desert Tortoise Council.

* Lunch hosted by U.S. Borax *

Awards:

- Desert Tortoise Preserve Committee

  For more than ten years of cooperative efforts to benefit the desert tortoise and the Desert Tortoise Natural Area.

- American Motorcyclist Association, District 37
  Bertrand Trucking Enterprises
  California Enduro Association
  California Off-Road Vehicle Association
  Desert Construction Company
  Desert Tortoise Council
  Desert Tortoise Preserve Committee
  Trona Railroad Company

  For cooperative volunteer services at the Desert Tortoise NaturalArea, February 1988.

Secretary swears in new Desert Rangers:
Donovan Dollar, Anthony W. Lue, Mary E. Trautner

Depart Desert Tortoise Natural Area
2:00 PM June 21, 1988

Aerial Viewing Enroute

MOJAVE AREA WINDMILLS

One of two sites in the Desert where energy from the wind is being harnessed, the Mojave area provides four companies with public lands for wind turbine generator fields. Total electrical power output is 200 megawatts per day. Annual revenues for use of the public lands is $225,000.

EDWARDS AIR FORCE BASE

Edwards Air Force Base began in 1934 as a bombing range. It was modified several times and reached its current size of 301,000 acres in 1958. Its modern mission is for testing aerospace equipment, including providing support for the space shuttle. The flat, hard surface of Rogers Dry Lake, with its nearly unlimited landing space, has made Edwards Air Force Base famous as a test site for experimental high-performance aircraft, including the X-15.

U.S. BORAX MINE

This large mine produces 60 percent of the borax products in the free world. Approximately 20 acres of public lands are involved in the operation. The open pit is 600 feet deep and averages 1 mile in diameter.

LUZ SOLAR ELECTRIC GENERATING STATION

The Luz Solar Electric Generating Station near Kramer Junction will produce 150 megawatts of electrical energy from solar power, and is the world's largest solar-electric generating field. About 20 acres of public land is used by Luz Engineering under a right-of-way permit. Eventually, the land will be exchanged for lands within the Desert Tortoise Natural Area.

EL MIRAGE

One of the most popular recreation areas in the high desert, El Mirage is a flat, hard lake bed well suited to a variety of recreational activities. The lake is used for sandsailing, gyrocopter and glider flying, motorcycle and dune buggy operation, model airplane and rocket flying, and automotive time trials. The area also is used for filming movies and television commercials. Although part of the area is public land, BLM is one of several landowners in the area, which complicates its management.

STODDARD VALLEY/JOHNSON VALLEY OFF-HIGHWAY VEHICLE OPEN AREAS

Two of the most popular off-highway vehicle areas in the California Desert (due to their proximity to major population centers), these areas offer diverse terrain and a variety of challenges. In addition, the creosote bush rings found in Johnson Valley generally are recognized as the oldest living plants known. The oldest has been dated at about 5,000 years old, though some rings may be more than twice that age.

STOP 12 - GEORGE AFB

Arrive George Air Force Base:
2:30 PM June 21, 1988

George Air Force Base was created in 1941 as an Army Air Base and was reestablished in 1950 as George Air Force Base. The Base is responsible for: 1) rapid deployment in response to threats against the U.S.; 2) training of German and American air crews in F4 fighter aircraft; and 3) tactical air operations in support of Fort Irwin. Secretary Hodel will inspect airspace needs in the Desert from an F4 as part of the military briefing.

Reason for stop:

- Emphasize military importance of Desert particularly in aircraft testing and training.
- Show importance of military airspace and corridors over BLM lands.
- Illustrate problems inherent in changing land classifications that will affect critical military training.

Depart George Air Force Base:
5:30 PM June 21, 1988

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TOUR ITINERARY

STOP 1 Bighorn Institute

STOP 2 Chiriaco Summit

STOP 3 Gold Fields

STOP 4 Imperial Sand Dunes

STOP 5 Wiley Well Campground

STOP 6 Kelso Dunes/Depot

STOP 7 Mountain Pass

STOP 8 Old Mojave Road & Kelbaker Road

STOP 9 Mid Hills Campground

STOP 10 Fort Irwin

STOP 11 Desert Tortoise Natural Area

STOP 12 George AFB

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